Standards of Care for Patients with Type 2 Diabetes in IHS (December, 1997)

The Standards of Care for Type 2 Diabetes have been developed and updated by the IHS National Diabetes Program to help provide consistent, quality care to patients with diabetes.

1. Baseline Studies

Height- Measure once and record on PCC Health Summary. *If PCC is not available, record on diabetes flowsheet. For children < 18 years of age, height and weight should be recorded at each visit.* Use to calculate body mass index and ideal or reasonable body weight.

Date of Diabetes Diagnosis - Record on PCC Health Summary. *If PCC is not available, record on* diabetes flowsheet. Longer duration of diabetes correlates with increased risk of complications.

EKG - Obtain baseline then repeat every 1-5 years as clinically indicated.

PPD - Should be documented once after diagnosis of diabetes (Offer INH prophylaxis to patients *according to protocol).*

2. Each Clinic Visit

Blood Pressure - (Target BP is $\leq$ 130/85) Additional protection against complications including renal failure may be obtained by lowering BP further.

Weight - Compare with measurements from prior visits to identify trends.

Blood Glucose - Results of lab determinations and self-monitoring should be available for *timely* discussion with the patient. Hemoglobin A1c every 3-4 months*.

- *fasting/casual **glucose measurement** and **self-monitoring** records should be available for timely discussion with the patient at each visit. SBGM records are vital to diabetes management decisions.*

- *Determine if **HbA1c** has been performed within past 3-4 months, and order if due. Patients in acceptable glycemic control (HbA1c#7.5%) should be tested at least every 6 months. HbA1c estimates the average degree of glycemic control over the preceding 3 months. HbA1c is the standard way to measure glycemic control.*

- *HbA1c results should be discussed with the patient at the time of the patient visit. If in-house measurement is unavailable, blood sample should be obtained several days before the clinic visit.*

At each clinic visit, the appropriate education, intervention, referral, and or follow-up will be provided as indicated.

Foot Check - Inspection of feet and nails. Check for ingrown toenails, calluses, deformities, pressure points, ulcers, and cellulitis.

**This measurement estimates the degree of glycemic control over the preceding 3 months. HgA1c has become the standard way to measure glycemic control. Self Blood Glucose Monitoring (SBGM) records also contribute to management decisions and patient education.*

3. Annual

Creatinine - Screen for renal insufficiency.

Complete UA/Microalbuminuria *- A test for urine protein should be performed yearly. If negative, a screening test for microalbuminuria should be performed (by A/C ratio or dipstick test). Dipstick-positive microalbuminuria should be confirmed on a separate specimen using an A/C ratio (abnormal $\geq$ 30mg/gm) or 24 hour urine.*

ACE inhibitors should be considered in patients with microalbuminuria or proteinuria, even if normotensive.

Lipid Profile to include LDL & HDL
Risk factors for atherosclerosis include LDL>130, HDL<40 and TG>200. Even lower LDL and TG values represent increased risk in persons with previously documented atherosclerosis. These risk factors, especially elevated LDL, should be treated aggressively. Caution should be used when considering agents that aggravate hyperglycemia.

A lipid panel should be performed annually (TC, LDL, HDL, TG). Elevated TC, LDL, TG and low HDL confer greater risk for atherosclerosis. Lipid-lowering therapy is indicated when LDL levels are , 130 or TG , 200. If vascular disease is present, treatment goals are to achieve LDL levels + 100 and TG + 150. The NCEP recommends a goal of LDL + 100 (and TG + 150) for all patients with Diabetes.

Aspirin Therapy *- Men and women with diabetes have a 2-4 fold increase in risk of dying from complications of cardiovascular disease (CVD). Aspirin has been used as a primary and secondary prevention strategy to prevent cardiovascular events in non-diabetic and*

diabetic individuals. Enteric-coated aspirin in doses of 81-325mg/day is recommended.

- *Use of aspirin therapy as a secondary prevention strategy in diabetic men and women who have evidence of large vessel disease, such as history of MI, stroke, peripheral vascular disease, claudication and angina.*

- *Consider aspirin therapy as a primary prevention stategy in high risk men and women with diabetes. This includes individuals with family history of CVD, cigarette smoking, hypertension, obesity, albuminurial, and dyslipidemia.*

Eye Exam - Retinal exam through dilated pupils or fundus photo. *Type 1 diabetes should receive an initial exam within 3-5 years of diagnosis once they are $ 10 years of age. Type 2 diabetics should receive an exam at diagnosis.*

Dental Exam - Screen for periodontal disease.

Foot Exam - Risk assessment to include pulse check and sensory evaluation with monofilament, identification of foot deformity, and documentation of history of foot ulcers.

Screen for Neuropathy - By history and physical, include sensory, motor, and autonomic evaluation.

4. Immunizations and Skin Tests

Flu Vaccine - Yearly

Pneumovax - Vaccinate everyone at the time of diagnosis. Revaccination should be strongly considered five (5) years after the first dose for those patients at highest risk of fatal pneumococcal infection (e.g., asplenic patients) or those at highest risk of rapid decline in antibody levels (e.g., those with chronic renal failure, nephrotic syndrome, or transplanted organs). *Revaccinate all patients $ age 65 years if it has been > 5 years since initial vaccination.*

dT - Every 10 years.

PPD - Once after diagnosis unless known positive. PPD-positive people with diabetes, including American Indians with type 2 diabetes, have 5 times the risk of reactivating TB. All diabetic patients with positive PPD including those over age 35 should be given INH chemoprophylaxis according to current guidelines.

Hepatitis B - Vaccinate those persons whose renal disease is likely to lead to dialysis or transplantation (serum creatinine $\geq$ 2.0).

5. Special Aspects of Diabetes Care

Lab Tests - C-peptide, the other half of pro-insulin can evaluate a patient's endogenous insulin secretion and help distinguish between Type 1 and Type 2 Diabetes. The test can be useful in at least two clinical situations:

1. Solving a clinical problem about using oral agents vs. insulin.
2. Evaluating a patient with history of ketoacidosis when stable (useful in setting of ETOH, acidosis, and diabetes to determine ongoing need for insulin).

6. Self-Care Education - Use of the PCC education codes to document education is encouraged.

Nutrition Education - Meal planning, nutrition education, and exercise are the primary treatment strategies for Type 2 Diabetes. The Indian Health Service Diabetes Program supports the American Diabetes Association position that all persons with diabetes receive regular nutrition counseling and are seen by an RD/nutritionist every six months to 1 year. Some people may require more frequent evaluation and counseling.

Diabetes Education - All patients with diabetes and their families should have diabetes self-care information. The National Standards for Diabetes Care and Patient Education provide guidelines for education program development with criteria specific for Native American health care facilities. Every facility should work towards providing systematic mechanisms to make culturally relevant self-care information available for patients.

Exercise Education - Exercise is associated with improvement in both short-and-long-term metabolic control. Exercise counseling should be provided to all persons with diabetes. The appropriate type of activity, including frequency, duration, and intensity, should be individualized for each patient.

Education and Glycemic Control

- Self monitoring results should be discussed with the patient at each visit.
- HbA1c* results should be discussed with the patient within 2 weeks of the test, preferably at the patient visit.

Self-Blood Glucose Monitoring (SBGM) - *The purpose of SBGM is to determine the pattern of blood glucose throughout the day. This pattern provides information for*

selection and adjustments in therapy. Frequency of monitoring must be individualized and may vary as day-to-day circumstances require.

7. Routine Health Maintenance

Physical Exam
Complete exam as baseline, then routine.

Pap Smear/Pelvic Exam
Yearly

Breast Exam
Yearly

Mammogram
Every 1-2 years in women ages 40-49, yearly thereafter.

Rectal Exam/Stool Guaiac
Yearly in adults $\geq$ 40 years of age.

Tobacco Use
Current tobacco use should be documented and a referral made for cessation of tobacco use.

8. Pregnancy and Diabetes

All women who are in their childbearing years should receive pre-pregnancy counseling for optimizing metabolic control prior to conception. Counseling for family planning is essential to achieve this goal.

American Indian women are at increased risk for having gestational diabetes (GDM) and they should be screened routinely. Patients with previous GDM, previous fetal macrosomia, or family history of diabetes are at even "higher risk" and should be screened early in pregnancy.

All American Indian and Alaska Native women should have blood glucose measured during the first prenatal visit since an elevated level may detect undiagnosed pre-existing Type 2 diabetes. A screening OGTT should be performed at 24-28 weeks of gestation. This should consist of a 50-gm oral glucose level given in the non-fasting state and a plasma glucose measurement one hour later. A value $\geq$ 140 indicates the need for a *diagnostic OGTT*. This requires a fasting

glucose followed by a 100 gm oral glucose load and plasma glucose measurements at 1-hr, 2-hrs, and 3-hrs later. "Higher risk" patients should receive a screening OGTT during the first prenatal visit regardless of gestational date. If the screening test is performed prior to 24 weeks and is negative, the screen should be repeated at 24 to 28 weeks.

Pregnant women with diabetes (gestational or pre-conceptional diabetes) should practice frequent self-blood glucose monitoring and maintain normal blood glucose throughout the pregnancy. Women with GDM should be evaluated at the six-week post-partum visit with a 2-hr OGTT post a 75-gm oral glucose load to test for Type 2 diabetes. Follow-up at regular intervals should be continued to include annual screening for diabetes.

9. Tuberculosis and Diabetes Patients*

A positive PPD means that a person has been infected with TB, but may not have active disease. TB infection can reactivate among people with particular risk factors, including diabetes. Diabetes increases the risk of TB 2 to 6 times. Other risk factors include: recent PPD conversion within 2 years, chest x-ray showing old active disease, immunosuppressive drugs, and ESRD. Recent data indicate that hemodialysis increases the risk of TB 10 to 15 times.

We can prevent reactivation by prophylaxis with INH. In general, people who have a positive PPD should receive INH prophylaxis, *except* in the following circumstances:

- severe liver disease
- adverse reaction to INH
- age over 35 and *no risk factors* such as diabetes
- suicidal ideation

Before chemoprophylaxis is started, active TB must be excluded, since treatment for active disease requires multiple drugs.

IHS TB Protocol for Patients with Diabetes:

1. Check the PPD status of all patients with diabetes.

2. If positive, check status of past treatment for active TB or INH prophylaxis. If the patient has not been adequately treated, rule out active disease by history (weight loss, etc) and recent chest x-ray (within 6 months). If there is no evidence of active disease, offer INH prophylaxis to all patients with diabetes, regardless of age, unless the patient has liver disease or a previous adverse reaction to INH. INH

should be given with pyridoxine.

3. If no PPD has been *placed* since the diagnosis of diabetes and the patient's PPD status is negative or unknown, check the PPD once after the diagnosis is made to make sure that the patient is PPD negative. Subsequent PPD's need to be done only in conjunction with contact of active cases.

**Complete TB Standards of Care for IHS are available in the IHS Provider. Welty TK and Follas R. IHS Standards of Care for Tuberculosis. IHS Primary Care Provider, 1989, 14:54.58.*